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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/694,030

10/28/2003

Ji Yong Park

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01/19/2005

STAAS & HALSEY LLP

SUITE 700

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WASHINGTON, DC 20005

EXAMINER

LANDAU, MATTHEW C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 01/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,030

Applicant(s)

PARK ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 8-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/28/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I and Species II in the reply filed on November 4, 2004 is acknowledged. The traversal is on the ground(s) that there is no undue burden on the examiner to examine all claims in the same application. This is not found persuasive because a search for the device claims 1-7 does not require a search for a method of crystallizing silicon using a particular type of mask, as claimed in claims 8 and 15. Examining claims drawn to both inventions (and all species) would require extensive additional searching that would present on undue burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

After a review of the drawings, it appears that claim 4 also reads on the elected species. Therefore, claim 5 and 8-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention/species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 4, 2004.

Drawings

Figures 1A-1D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not

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accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Jung (US Pat. 6,755,909).

Regarding claim 1, Figures 4-5D of Jung disclose a polycrystalline silicon thin film comprising primary grain boundaries (the solid lines defining the squares shown in Figure 5D) that are not parallel to each other, wherein an area surrounded by the primary grain boundaries (the squares) is larger than $1 \mu\text{m}^2$. Jung disclose the strips 111/121/131/141 shown in Figure 4 are 2-10mm, and that the width of the strips 112/122/132/142 is equal to the stripes (col. 5, line 68-col. 6, line 8). Jung also discloses the region 210 shown in Figure 5A corresponds to the slits 112 (col. 6, lines 45-47). Therefore, region 210 is at least 2mm wide. Figure 5b shows a similar process using the vertical slits 122, meaning region 220 is also at least 2mm wide. After the final crystallization step shown in Figure 5C, the vertical dimension of the primary grain boundaries essentially includes half the width of regions 210 and half the width of the portion between

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adjacent regions 210, while the horizontal dimension essentially includes half the width of regions 220 and half the width of the portion between adjacent regions 220. Since regions 210/220 are at least 2mm wide, and the spaces between the respective regions is at least 2mm wide, it is clear that the area within the primary grain boundaries is at least approximately 2mm^2 , which is well over $1\text{ }\mu\text{m}^2$.

Regarding claims 2 and 3, Figure 5D of Jung discloses the primary grain boundaries (solid lines defining the squares) are formed in a closed polygonal (rectangular) shape.

Regarding claim 4, Figure 5D of Jung discloses the primary grain boundaries are symmetrical to each other centering around a certain axis passing through the primary grain boundaries. The axis could be a vertical line extending through the center of one squares shown in Figure 5D.

Regarding claim 6, Jung discloses the polycrystalline thin film is used in a thin film transistor (TFT) (col. 7, lines 25-28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 102(e) as anticipated by Jung or, in the alternative, under 35 U.S.C. 103(a) as obvious over Akimoto et al. (US PGPub 2003/0197666, hereinafter Akimoto) in view of Jung.

It is unclear if the limitation "used in an organic electroluminescent display device" is a recitation of intended use or if the limitation positively claims a display device. Using the broadest reasonable interpretation, it is considered the limitation "is used in an organic electroluminescent display device" is merely a recitation of an intended use of the claimed thin film transistor. The TFT of Jung (col. 7, lines 25-28) is capable of being used in an electroluminescent device therefore the claim is anticipated. Assuming, *arguendo*, that the organic electroluminescent display device is positively claimed and must be present in order to have anticipation, the claim would still be obvious over Akimoto in view of Jung. Figure 1 of Akimoto discloses an electroluminescent device comprising a TFT with a polycrystalline silicon thin film active layer (page 3, paragraph [0037]). Jung discloses a TFT with the properties of claim 1 (see above). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify Akimoto by using the TFT of Jung for the purpose of using TFT with relatively uniform characteristics (col. 7, lines 25-28 of Jung).

Conclusion

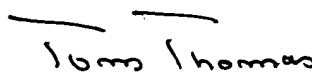
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone numbers for the organization where this application or

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proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


TCM THOMAS
SUPERVISOR / PATENT EXAMINER
TECHNOLOGY CENTER 2800

Matthew C. Landau

Examiner

January 11, 2005